

A. Scholarly communication and research evaluation: the Open Science revolution

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Introduction

The introduction is a short tongue-in-cheek presentation of ideas that many Italian researchers (and, above all, research evaluators) are taking for granted:

- a) being a good scientist means having many published papers (even if almost nobody can read them because their publishers put them under a paywall)
- b) published papers can be considered as properly scientific only if they have been published by proper scientific publishers, like Elsevier (or Wiley, or Springer-Nature).
- c) any criticism against such a publishing and assessing system and some of its results (i.e. making research difficult to access in reading, in writing, or both) is done out of envy.

Slide 3: a very competitive Italian professor of political science claims, in a rather raucous way, that assessing universities on the basis of the quality of the papers written by their researchers rather than by means of numeric algorithms would favor his average colleagues who are not able to sport "any proper publication".

Slide 4: it shows a selection of "published" books and paper written by the above-mentioned professor. They are all under a paywall. How could they be called "publications", if they are not properly public? Could a paywalls be a suitable way to select competent readers?

Slide 5: it deals with a practice more common in the field of humanities and social sciences: writing books to enrich a researcher's curriculum (and his or her publisher, selling the books to research and public libraries) even if, according to the publisher himself, nobody can (and will) read them.

Slide 6: two economists, Ribichini and Bagnai, are fighting on a political forum. Ribichini is asserting that Bagnai is a marginalized theorist, who is not taken very seriously by the scientific community of his disciplinary field. Bagnai replies that it is not true, because the proceedings of a conference organized by him have been published by an Elsevier journal that has an "impact factor" as well. I did not correct Bagnai's typos because their very presence gives the reader an idea of the heat of the argument.

1. Science without publishing: knowledge communities before the invention of printing

We are accustomed to believe that science cannot exist without commercial publishers. Why, then, and how could a philosophical (i.e. scientific) tradition exist *before* the invention of printing?¹

Slide 7: it shows a quote from Plato's *Phaedrus*, about the myth of Theuth, god and inventor of writing (<http://oldsite.english.ucsb.edu/faculty/ayliu/unlocked/plato/plato-myth-of-theuth.pdf>). Writing is a powerful tool, because it unlooses the transmission of information from word of mouth. Still, hearsay made possible a real-time "cognitive barter" and an interactive conversation that can

1 Before the Modern Age, and in the early Modern Age as well, science was a branch of philosophy: physics, for instance, used to be called "natural philosophy."

create new knowledge as well. Writing, on the other hand, leaves a lasting record, but at a price: freezing the synchronous stream of oral conversations and slowing down the interactivity of our thought and learning processes. For this reason, writing, according to Plato, helps us to collect and preserve a lot of information, but does not help us to apply, to understand and even to criticize and to enhance it. Being *doxosophoi*² is not the same as being *sophoi*. Knowing that is not the same as knowing why: to learn how to know-why, books are not enough: we need the living conversation (and the criticism) of a scholarly community.

Slide 8: Martin Luther complains that reprinters (i.e. unauthorized printers) are altering his translation of the Bible so deeply that he cannot recognize his own work in the pages reprinted by them. In the early Modern Age, writing, reinforced by the industrial power of printing, appears to be out of the scholarly control, even when scholars – like Luther - are not working for profit. Before the invention of printing, the very slowness of copying by hand made the balance between persons and texts easier to attain: the craft of amanuensis could not overload the diverse scholarships, arts and crafts of knowledge communities with writings exceeding the amount of what the latter were interested in reading and, therefore, in preserving by having them copied. Now, however, printed papers are going out of control. Luther, still a Middle Ages man, cannot do more than complaining and addressing readers that he cannot meet personally any longer, but was able address only through printers (and reprinters).

2. Open science: a modern “revolution”

However novel it may seem, Open Science is a revolution, whose practices are so extraordinary that they need to be mandated by funding and research organizations, only in an astronomical (<https://www.thoughtco.com/revolution-geography-definition-1434848>) meaning. The idea that science, to be science instead of magic, should be made public is as old as Modern Science itself.

Slide 9: in the Middle Ages, research used to be secret. Making research public, instead, is among the features of the modern science revolution. Galileo Galilei did not need a mandate from the Holy Office to make the discovery of the four Medicean planets (i.e. the largest moons of Jupiter) public.

Slide 10: Research cannot be secret any longer, because it needs the community of scientists to “provide for the social validation of scientific work” (R.K. Merton, 1968)

Slide 11: in the early Modern Age, academies were founded again, on the model of the ancient Plato’s academy, to host free debates rejecting any argument from authority.

2.1 Modern science as a club good

Modern scientists contrived a way to cope with the power of printing, by embracing it as a means to register their discoveries and to promote their reputation: they founded academies as open, but exclusive, knowledge communities and invented the scientific journal as “social registry of scientific innovation” (<https://www.arl.org/resources/in-oldenburgs-long-shadow/>).

Slide 12 The first modern scientific journal, the *Philosophical Transactions of the Royal Society*, was created within an academy, with the purpose to create a social registry of scientific innovation. Why? Here is the account of the historian Adrian Johns (<http://www.adrianjohns.com/piracy/> ch. 4, emphasis added):

2 *Doxosophos* means both “knower of opinions” and “seemingly wise”. *Sophos*, on the other hand, means “wise”.

In the Society itself, however, four relatively discrete stages characterized and shaped the conduct of reading. I have called these **presentation, perusal, registration, and publication** (which might well take place via correspondence rather than print). Briefly, formal presentations of papers and books happened almost every week, and furnished the Society's major "occasions for discourse." The response often took the form of a "**perusal**" —a **delegated reading**, carried out by two fellows who took the work away, examined it for a week or two, and reported back. Many perusals were detailed and creative, leading to new experiments, and some took weeks to deliver. Further conversation and experiment inspired by the perusal would then ensue, and they too might continue for weeks, or even months (and, on exceptional occasions, years). This kind of process constituted the mainstay of the Society's work. Without perusal, it was unlikely that a submission would lead to any conversation at all, and hence to any new experimental knowledge. **And a perusal was often characterized after the event as the reading of the Society itself, collectively**—not least by authors and booksellers eager to trumpet it as an endorsement in a bid for customers. Within the Society, **registration** often accompanied presentation and perusal. The submission was transcribed into a manuscript volume, which was held under lock and key by the secretary. A machine or artifact submitted could likewise be boxed up and deposited. These records were then kept secret, in order to secure achievements from what was called "usurpation." **Internally, the register soon built up into an archive of discoveries, to which the Society could lay claim not as author, but as facilitator, securer, and virtual judge of authorship.** Defenders of the experimental philosophy thus came to refer to the register whenever they were challenged to show evidence that the activity had achieved any results. But therein lay a problem. **The register was confidential.** As a result, while it might succeed in securing authorship within the Society itself —and that might be enough to attract some outsiders to send it their discoveries—it could do little for audiences beyond its walls. Nor could it persuade skeptics that the virtuosi were creating useful knowledge. Both reasons help to explain why Oldenburg resolved to deploy a new kind of printed object that would extend the register's reach across London and Europe. Submissions would still be registered at the Society, but some would be called forth as what one fellow called "ambassadors." **They would represent their authors, the Society, and the enterprise of experimental philosophy itself in a new "public register" that would be printed regularly and distributed through the European book trade.** Invented and administered by Oldenburg, this public register was named by him *Philosophical Transactions*.

Slide 13: anonymous peer review is not as old as scientific journals. The *Phil. Trans.* review used to be public and open: only in 1833 it became private and anonymous. The aim of its proponent, the Cambridge professor William Whewell, was making science more visible (<http://www.nature.com/news/peer-review-troubled-from-the-start-1.19763>). In other words, anonymous peer review was not meant, by him, as a kind of quality assurance: it was meant as advertising!

Slide 14: according to the economist Paul A. David, open science could not have emerged under a capitalist system, because capitalists prefer to invest their money in order to earn more money rather than to enhance their reputation through liberal acts of patronage in favor of arts and sciences, like the noble lords and kings in the feudal Europe. Modern scientific research could only flourish thanks to patronage. And opening it within academies, like the Royal Society, and on their journals helped prospective patrons - aristocrats and kings - in selecting the best reputed scientists. Being

accepted among the members of an academy and publishing in its journal were ways to enhance one's own status by means of a kind of “signaling value” (<https://www.wisegeek.com/in-economics-what-is-signalling.htm>) and to gain the opportunity of participating in networks of expert “peers”. Such informational advantages, however, came at a price: journals and academies entailed a degree of closeness or of conservatism.

2.2 The Age of Enlightenment

At the end of the Enlightenment age, Immanuel Kant imagined an unabridged scientific debate aimed to encourage everybody to answer to the call to think for themselves.

Slide 15: in the Modern Age scientific texts belonged to a *de facto* public domain because the scope of literary privilege (the ancestor of copyright) did not cross the boundaries of the state granting it. Later, when copyright replaced privilege, many bilateral agreements among states recognized - between 1858 and 1908 - a kind of free access to scientific texts whose rules were very similar to our CC-by license: scientific works could be reprinted provided that their first publishing source and authors were acknowledged.

3. Research evaluation: assessing science through proxies?

In a world of information overload, could science be assessed without reading any paper?

Slide 16: The printing process had a peculiar technological and economic bottleneck: since it was not possible to print everything, the manuscripts had to be selected for publishing, through the expertise of commercial and scientific gatekeepers working as peer reviewers. For this reason, being published by a peer-reviewed scientific journal could be treated as a kind of scientific branding, and receiving many citations within a selected set of scientific journals could be sold as a way to measure quality through impact.

Slide 17: see slide 7. Could a philosopher really believe that the amount of my published papers and of their citations is a proxy for my “science”? That I am a good researcher because I have some papers published and some of them are cited by other papers? That my productivity and the popularity of my work can heal me from the impostor syndrome?

Slide 18: if we believe that being a scientist means publishing papers and getting citations, we could also believe that papers and citations can be evaluation proxy even when evaluators are not able to read and to understand my work.

3.1 An example: MMR³ vaccine and autism

If my manuscript has been published in a high impact journal, it has to be scientifically sound. Really? The Wakefield fraud can help us to understand that things are a little more complicated.

Slide 19: Wakefield’s paper was published by “The Lancet”, an Elsevier journal that is widely cited and well-reputed (in more bibliometric words, it has a very high JIF).

Slide 20: Even if it had been published by “The Lancet”, Wakefield’s paper was based on a scientific fraud (see <https://www.vox.com/2018/2/27/17057990/andrew-wakefield-vaccines-autism->

3 Measles, Mumps, Rubella.

[study](https://www.nytimes.com/2018/08/04/opinion/sunday/anti-vaccine-activists-have-taken-vaccine-science-hostage.html)). And yet, it was the root of the anti-vaccine movement and of a long-lasting poisoning of the scientific debate. “Scientists are so terrified of the public’s vaccine hesitancy that they are censoring themselves, playing down undesirable findings and perhaps even avoiding undertaking studies that could show unwanted effects.” (<https://www.nytimes.com/2018/08/04/opinion/sunday/anti-vaccine-activists-have-taken-vaccine-science-hostage.html>)

Slide 21: the Wakefield affair is a well-known (and damaging) instance of failure of the mainstream scientific publishing and research assessment system. Could we reply that it is just an anecdotal evidence, because the system is generally working well? Or, rather, is the system itself that makes frauds and/or a more or less innocent gaming easier and easier? If you use scientific journals as evaluation proxies, you encourage researchers to cheat and to game the system, by mixing up two very different goals: discovering the secrets of nature and being published on “Nature”.

Slide 22: can we really believe that if a paper has been published on a peer reviewed scientific journal, then it contains sound science?

Slide 23: even the editor of “The Lancet” doubts it.

Slide 24: “When a measure becomes a target, it ceases to be a good measure.’ Goodhart's law is a sociological analogue of Heisenberg's uncertainty principle in quantum mechanics. Measuring a system usually disturbs it. The more precise the measurement, and the shorter its timescale, the greater the energy of the disturbance and the greater the unpredictability of the outcome.” (<https://web.archive.org/web/20170114102715/http://www.atm.damtp.cam.ac.uk/people/mem/papers/LHCE/goodhart.html>)

Slide 25: scientific theories are not fungible objects, but mutually irreplaceable unique pieces. The Wakefield affair and its consequences cannot be dismissed as “anecdotal” even if his article about an alleged link between MMR vaccine and autism were the only accident of the high Impact Factor journal that published it. Even a single theoretical mistake could do a huge damage.

4. Knowledge communities

Before the invention of printing, knowledge communities contrived ways to put texts under their control, in order to prevent the delusion that makes us believe that (sound) science can be reduced to information written in (some particular) publishing venue. But printing and ICT gave an industrial scale power to the ancient unbalance between science - the living craftsmanship of a knowledge community - and its alleged embodiment in textual objects.

Slide 26: How to take advantage of the power of writing without forgetting that knowledge is made of people and conversations? Texts, it is true, provide reminders against forgetfulness (*Phaedrus*, 275d). They should, therefore, be used, but without taking them too seriously, because they are nothing without people. It is much more important “writing in the mind of the learner” (*Phaedrus*, 276a) by promoting knowledge communities: after all, in a manuscript culture, documents cannot survive and last without people copying, reading, studying and commenting them.

Slide 27: In such a growing unbalance between media technology and scientific research, also the modern scientific journal could be seen as a way to put the power of printing under the control of the scientific community.

4.1 Wilhelm von Humboldt's university reform

The Prussian reformer designed a model of university based on the idea that science is an unfinished task and needs an autonomous knowledge community endowed with the freedom to research and to criticize the established wisdom.

Slide 28: there is an uncanny agreement between the German idealist philosopher Humboldt and the contemporary American physicist Richard Feynman, according to whom “Science is the belief in the ignorance of experts” (http://www.fotuva.org/feynman/what_is_science.html).

Slide 29: the three principles of Humboldt's university reform.

Slide 30: Humboldt's comprehensive plan of a universal education was never implemented. In its abridged implementation, his university model guaranteed academic freedom, but within an ivory tower, and under a kind of separation of powers. The universities evaluated researchers, by bestowing them the *venia legendi*, i.e. the qualification to conduct self-contained university teaching; the government appointed some tenured professor among the lecturers qualified with the *venia legendi*.

5. Open science: philosophical ideal or research management model?

At the beginning of the last century, universities started to metamorphose in state-owned capitalistic enterprises, as the German sociologist Max Weber had precociously understood.

Slide 31: Max Weber, in his *Wissenschaft as Beruf*, depicted the transformation of university in a competitive, corporate-like research system populated with quasi-proletarian researchers the meaning of whose work does not depend on them, not even collectively.

Slide 32: open science can be understood in two different - and not necessarily congruent - meanings: (1) as a philosophical ideal of human emancipation through the opening of scholarly conversation among people; (2) as a management model that might also be aimed to the exploitation of open research texts and data for the sake of the market.

5.1 Open science in Italy

Slide 33-38: some background information for non-Italian students can be seen here: <https://archiviomarini.sp.unipi.it/858/19/Openscience.pdf>, §5. The same §5 contains the bulk of the argument presented by this final section. Ph.D. candidates who do not plan to continue their academic career in Italy, may skip it.

Slide 39 A centralized administrative research assessment mixes up scientific reasons validated through a public debate (the scales) with administrative obligations enforced by a government agency (the sword). The result is a research without autonomy, under the control of the government. The explanation about the mentioned iconic episode of the early Roman history is here: https://en.wikipedia.org/wiki/Vae_victis

Slide 40 AISA proposal: opening science by empowering authors. The creator of a scientific work, for which the research is funded in whole or in part by public funds, should have the right after a reasonable time span after the first publication, to make the work available to the public for free, provided that the source of the first publication is indicated.

B. Irresistible proxies? Peer review and (mainstream or alternative) bibliometric

1. *The lords of metadata*

Metadata are data about data: for instance, the metadata of an article are its author, its title, its date, its citations and so on. Our metadata tells a lot about us by tracing our relations with the environment around us: for this reason, grabbing and selling them is and could be very profitable.

Slide 1: Scival is an Elsevier service providing, in Elsevier's own words, "comprehensive access to the research performance of over 14,000 research institutions and their associated researchers from 230 nations worldwide. SciVal allows you to visualize your research performance, benchmark relative to peers, develop strategic partnerships, identify and analyze new, emerging research trends, and create uniquely tailored reports." Of course, Elsevier analytic solutions are not free: its market, however, depends on your competitive spirit. If you have the time to check the bibliometric scores of your colleagues and alleged friends in order to emulate them, Scival fuels your aspirations – and, of course, profits from the data you give away by using its services.

Slide 2: Elsevier is the biggest oligopolist in the field of science publishing: its behavior is the epitome of a worrying trend as well. Scientific publishers are shifting their core business from content-provision to data analytic services: "This is evidenced by a change in the product mix that they are selling across higher education institutions, which is expanding beyond journals and textbooks to include research assessment systems, productivity tools, online learning management systems – complex infrastructure that is critical to conducting the end-to-end business of the university. Through the seamless provision of these services, **these companies can invisibly and strategically influence, and perhaps exert control, over key university decisions**– ranging from student assessment to research integrity to financial planning." (<https://sparcopen.org/our-work/landscape-analysis/>)

Slide 3, 4, 5: Surveillance capitalism at its best! The Elsevier ecosystem allows it to control every step of your research and (academic?) life. And even its profit margin (usually above 35%) is huge

Slide 7, 8 A hybrid open-access journal is a subscription journal in which some of the articles are open access because their authors have paid for it. A hybrid publishers, therefore, gets paid twice for the same thing: by university and research libraries through subscriptions and by authors through APCs (article processing charges). This practice is called "double dipping".

Slide 9: an instance of the worrying trend of Slide 2. Elsevier is buying more and more academic service providers.

Slide 10: Elsevier is watching you (and profiting from your data and metadata) at every step of your research work.

Slide 11 “The top commercial publishers have benefited from the digital era, as it led to a dramatic increase in the share of scientific literature they published. It has also led to a greater dependence by the scientific community on these publishers” (<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502>).

Slide 12 Few large commercial publishers are buying out small and societal scientific publishers. The science publishing market is increasingly oligopolistic.

2. Metadata: a sociological theory of knowledge

According to Robert K. Merton a "sociological theory of knowledge" is a theory aimed at identifying the *social* foundations of valid knowledge.

Science is a deceptively inclusive word which refers to a variety of distinct though interrelated items. It is commonly used to denote (1) a set of characteristic methods by means of which knowledge is certified; (2) a stock of accumulated knowledge stemming from the application of these methods; (3) a *set of cultural values and mores governing the activities termed scientific*; or (4) any combination of the foregoing. We are here concerned in a preliminary fashion with the cultural structure of science, that is, with one limited aspect of science as an institution. Thus, we shall consider, not the methods of science, but *the mores with which they are hedged about*. To be sure, methodological canons are often both technical expedients and moral compulsives, but it is solely the latter which is our concern here. *This is an essay in the sociology of science, not an excursion in methodology*. Similarly, we shall not deal with the substantive findings of sciences (hypotheses, uniformities, laws), except as these are pertinent to standardized social sentiments toward science. *This is not an adventure in polymathy.*" (source: https://www.collier.sts.vt.edu/5424/pdfs/merton_1973.pdf)

In fact, a sociological theory of knowledge is prone to the danger of being just a more sophisticated and convoluted way to state "ipse dixit", for **it mixes up good science and socially successful research, or the validity of a theory and its social impact**.

Slide 13: while you do not earn anything from what you write on Facebook, Facebook does, by profiling you and selling to others its manipulation services (a.k.a. advertising). While you do not earn anything from the scientific articles you write, Elsevier (publisher and owner of Scopus) and Clarivate Analytics do, by selling your citation data to you, or to your university, or to your administrative research assessment system.

Slide 14 The ISI was a private company, selling bibliographical repertories and the access to its closed database. As such, its major interest was and is the profit of its owner. Currently, under the name of Clarivate Analytics, it belongs to a private equity and a merchant bank. To understand how such a commercial purpose affects bibliometric, the article <http://revistes.ub.edu/index.php/bullgirso/article/view/5926>, written by the mathematician A. Figà Talamanca, is still worth reading.

Slide 17: the Nobel prize laureate Peter Higgs has an H index of 6: in Italy, he could not even be hired as an associate professor! If you write few but fundamental research papers, you get an H index that is lower than the score you would get by writing many

review articles suitably distributed in time. The amusing <https://www.roars.it/online/il-nobel-dei-baroni/> is a recommended reading for the Italian speaking students.

Slide 18 In librarians' jargon, the serials crisis is the chronic subscription cost increases of scientific journals. The subscriptions prices have been soaring much more than the prices of the books, introduced, here, as a kind of control group.

Slide 22: "There is a disconnect between the research that reviewers purport to admire and the research that they actually support. *As participants on multiple review panels and scientific councils, we have heard many lament researchers' reluctance to take risks. Yet we've seen the same panels eschew risk and rely on bibliometric indicators for assessments, despite widespread agreement that they are imperfect measures*" (<https://www.nature.com/news/reviewers-are-blinkered-by-bibliometrics-1.21877> emphasis added)

Slide 23: a report about the present and the future of metrics from the European Universities Association.

Slide 30: overlay journals decouple publication and peer review, by selecting and curating texts already available online, for instance because they have been self-archived in some institutional or disciplinary repository. A list of full open access journals is curated and maintained by the DOAJ. The business model of the so called predatory publishing (red route) is getting payed to publish after a phony peer review, or without any review at all. Such a model can flourish because of a "publish or perish" research assessment system, encouraging researchers to a more or less *bona fide* predatory behavior. Suggested reading: <https://thinkchecksubmit.org/> - a site whose purpose is helping researchers to select trusted journals for their research.

Slide 31: the platinum (or diamond) route is trodden by journals allowing both readers and authors to read and write their articles without being charged for it, because the publishing costs are paid by universities and research institutions. Riviste.unimi.it, for instance, costs only 6000 euros a year: when publishing is meant as a collateral activity of libraries and university press, it is much cheaper than any subscription to Elsevier, Springer or Wiley.

Slide 40: Commentpress is a Wordpress plugin enabling readers to comment paragraph-by-paragraph, line-by-line or block-by-block in the margins of a text. <http://futureofthebook.org/commentpress/>. It is a very useful open peer review tool

Slide 44: Gold OA does not eliminate the dependence of science and humanities on commercial publishers. EU funders and research institutions could create a diamond or platinum public open access infrastructure, covering all the facets and steps of research, just by joining the already existing knots.

Slide 45: even if you are compelled to "publish" your articles in closed access journals, you may always deposit your manuscripts in some preprint server, to make them public and to gain the benefits of the Open science ecosystem.

Slide 48: <https://www.metrics-toolkit.org/> is site, recommended by DORA (<https://sfdora.org/read/>), illustrating the possibilities and limitations of several metrics, both traditional and alternative.

The San Francisco Declaration on Research Assessment (DORA), undersigned by many individual researchers, scholarly societies, universities (among which Oxford and Cambridge) and research institutions ask to “assess research on its own merits rather than on the basis of the journal in which the research is published” and to “capitalize on the opportunities provided by online publication”.

Take home message: the serials crisis can be solved only by addressing the research metrics and assessment question. If you keep on depending on Scopus and Clarivate Analytics, you will keep on paying Elsevier and Clarivate Analytics. Even the shift to Open Access, without a serious reconsideration of the current research assessment system, risks to become just a shift from paying too much to read to paying too much to write.

Such a reconsideration is particularly difficult in Italy, because its administrative research assessment system is centralized and built without any researchers' participation.

C. Copyright: taking authors' rights seriously

Slides 3-13: an introduction addressing the Italian Ph.D. candidates only, about two well-known plagiarisms whose “authors” were Paolo Miccoli, past president of the Italian National Agency for the Evaluation of the University and Research Systems (ANVUR) and Marianna Madia, former minister of Public Administration and Simplification in Renzi and Gentiloni cabinets. P. Miccoli pasted some copied passages into the application presenting his candidacy to the ANVUR board of directors: his plagiarism was discovered and made public before his appointment, but the government appointed him regardless. M. Madia pasted some copied passages in her Ph.D. thesis (<https://www.roars.it/online/minister-of-italian-government-plagiarized-her-phd-thesis-journalistic-investigation-reveals/>). The IMT school where she earned her Ph.D. title hired a private consulting company to scrutinize her work: the company came to the conclusion that her thesis did contain plagiarized parts, but that such behavior was not fraudulent, because, in the field of economics, plagiarism is a widely accepted practice - in spite of the indignation of the Italian Society of Economists about such a remark. Last but not least, even the current minister of education is being accused to have produced more than one partly plagiarized thesis during her university years.

Plagiarism would be a crime according to the Italian law, if done to get a degree or to win an open competition to obtain a job in the civil service. However, when the plagiarist is powerful enough, plagiarism becomes just another topic of political quarrels and nobody seems to care about it.

Slides 15-18: in the age of printing, the very technological and economic bottleneck represented by the printing press exempted both authors and readers from the need to cope with copyright. Copyright used to be a business of printers and publishers only, because they only had the power to reproduce texts on an industrial scale.

In the Internet age, since the Internet works as a giant photocopier, everyone can copy, print, reprint, mix and remix everything. Everyone is prone to the danger of being treated as a pirate printer even when he is sharing a book with his friends, or is distributing an articles to his students or colleagues. Copyright is, and used to be, a monopoly, whose power operates on everyone, and justifies a pervasive and restrictive surveillance regime.

All the current copyright laws are extensions and modifications of the copyright of the age of printing. No legislative body has yet dared to consider a comprehensive reform, by asking whether or how we still need publishers and whether it is unavoidable to keep on protecting their business by granting them a temporary, yet very long, monopoly on reproducing and distributing creations of the mind.

When you are in Italy, you should apply the local copyright law, unless you sign an international contract in which you agree to apply the law of a foreign country. If your international contract does not contain any clause about the applicable law, the law of the

publisher's country is usually preferred, unless some of its rules are in contrast with the Italian law fundamental principles.

Slide 19: the “disegno di legge Gallo” proposed to grant scientific authors the right to make their articles freely available to the public upon expiry of 12 months after first publication, even if they have granted its publisher or editor an exclusive economic right. Currently, after a modification in the composition of the majority supporting the Italian government, the law proposal appears to be stranded in Senate.

Slide 25: moral rights are the major differentiating element between copyright and the continental “diritto d'autore”, or “droit d'auteur”, or “Urheberrecht”. The continental copyright is more than an (intellectual) property because the creation of minds are more than products: they are conceived like action, deeds, which remain connected to authors' history and personality.

Slide 27: the American fair use, which allows to use copyrighted works in research and teaching, cannot be translated accurately in continental copyright law. In Italy, for instance, I can employ a copyrighted work in teaching, but only on condition that it is used “just for illustrative and non-commercial purposes”. Theoretically, such a clause would not allow to make a copyrighted work available for students to download.

Slide 34: GPL: a “viral” license? “The GPL doesn't only specify that software licensed under it must be free, but that *the software code must remain free even when it is modified and redistributed*. This latter characteristic is often described — to Stallman's ire — as having a viral effect, since it encourages the proliferation of Free Software. [...] The GPL-covered code spreads like a spider plant, not like a virus.” https://archive.org/stream/The_Basement_Interviews/Richard_Stallman_Interview_djvu.txt

Slide 40: the English version of the University of Pisa regulations for Ph.D. courses is slightly different from the (updated) Italian one. Indeed, it does not mention your obligation to make (with some exception) your dissertation public on the University of Pisa institutional open access repository.

See

http://dottorato.unipi.it/images/stories/regolamenti_eng/estratto_reg_ateneo_eng.pdf:

The final version of the dissertation shall be submitted by the PhD candidate in electronic format, at least 3 days before the defense, taking care to provide it in time to the members of the panel; by this date, the doctoral candidate shall also submit to the offices the duly signed frontispiece issued by the database of the dissertations and of the electronic dissertations. The competent offices shall ensure that the necessary steps for the conservation of the dissertation in the ministerial database and the central national libraries of Rome and Florence are carried out, within the time provided for by the regulations in force. Subject to the approval of the faculty board, parts of the dissertation may be made unavailable in relation to the use of data protected by industrial secrecy pursuant to current legislation on the subject, as well as in other cases provided for by the regulation for electronic theses.

Slide 46: Both Darwin and Wallace were in the position to “steal” ideas from each other. None of them did it: they shared the credit of their discoveries by making them public at the same conference. In the world of “publish or perish” such a fair play would not have been possible, because scholars cannot rely on an autonomous scientific community sharing strong ethical rules any longer (CUDOS: https://en.wikipedia.org/wiki/Mertonian_norms).

Take home message: today, young Italian researchers cannot choose between the following two options:

- giving away their copyright to some commercial publisher, because being read and understood is less important than gaining points to boost their (unlikely) academic career (blue pill)
- articulating their copyright in licenses allowing people to read and to share at least some version of their work within a possible community of knowledge (red pill).

The current research assessment system compels them to swallow the blue pill, even if such a “choice” might be troublesome in dealing with EU research projects and grant applications, since the EU policy is pushing towards Open Science. The green route (self-archiving their preprints into open institutional or disciplinary repositories) appears, at the moment, the only viable solution, which comes at a price: giving up the opportunity to experiment with more radical - and more fitting to the internet age - instances of open science.